(54) Title: SYSTEM FOR AUTOMATIC DISTRIBUTION OF UPDATED CONTACT INFORMATION
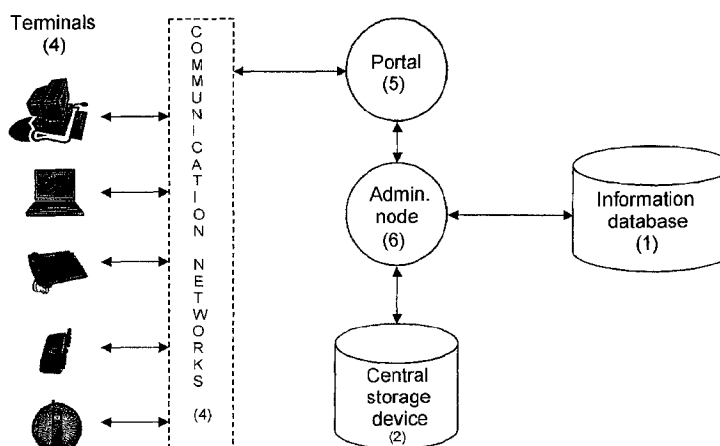
(57) Abstract: The system comprises one or more information database(s), either external or integrated in the system, and a central storage device identifying users of the system through uniquely identifiable profiles and the contact lists of the users by means of a specification of a number of contact for each user. Further, when a need of information concerning one or more certain contact(s) being specified as contact(s) of the user occurs on a user terminal, a means (e.g. a node, a server, a portal, a platform) provides distribution of information regarding the request for information from one or more information database(s) to the terminal of said user through one or more communication networks. The information is referably adjusted to automatically update the register(s) on the platforms of the terminals of the respective one or more users, e.g. the contact register in Microsoft Outlook. When a user adds and/or removes one or more contacts in the contact register of one of his/her terminals, the system will accordingly update the contact list of that user in the central storage device, and through this also other contact registries the user might have in other terminals.

SYSTEM FOR AUTOMATIC DISTRIBUTION OF UPDATED CONTACT INFORMATION

Field of the invention

5   The present invention is related to a system for automatic distribution of updated information from one or more centralized registers to a network of decentralized devices.

Background of the invention

10   Information concerning addresses, telephone numbers, place of work, e-mail addresses and other addressable identities have recently increased in volume and complexity. Changes in such information also seem to occur more frequently. The fact that people often change jobs, residence, cellular
15   phones, and dwell and work in several different places are some of the reasons for this. Corrective information may be distributed by mail or e-mail, or sometimes orally. New contacts may be established by exchanging business cards, but the information of which will rapidly become outdated.

20   However, electronic storage of contact information will be more common as both the number of contacts per person and the need of always having correct contact information available increase.

Many people have their contact information localized in
25   more than one place; in the cellular phone, the computer at home and at work, etc., but tend to update only the currently nearest register when a change in contact information is received. Further, even if a person to whom the change of information is concerned is careful about
30   informing all his/her contacts about the change, he/she can not be sure that all contact registers in which he/she is

included will be updated, as this is a manual job carried out by each of the receivers of the change information.

Databases and address registers will rapidly become worthless if they fail to be frequently updated. Simultaneously, it has become cumbersome and time consuming to manually keeping the registers updated.

Today, there are some services for centralized storage and updating of contact information, wherein the users get access to information about their contacts, e.g. through a web interface. The main problem with these services is that they do not offer a complete "washing" of the contact and address registers the users might have locally stored on their personal terminals. Further, whether information regarding a contact actually exists in the system depends on whether or not the contact is registered as a user of the service. The fact that the service is based on that the information database is an integrated part of the system, makes the information incomplete (i.e. not all desired contacts of a user are necessarily users of the system) for most of the users.

U.S. patent 6,141,663 discloses a method and system for updating a number of databases with redundant data as the change occurs in a common central database. The changes are converted to the format of the respective databases. The object of this invention is to ensure that the content of the number of databases within the same network, organization or system corresponds to each other.

U.S-A 6, 073, 141 indicates a system and a procedure for synchronizing decentralized versions of a centralized database. Information stored on decentralized terminals is updated on predefined times or due to certain happenings.

However, the above-mentioned publications do not solve the problem of keeping registries with contact information on

distributed terminals updated. The first mentioned solution is depending on manual, centralized maintenance of the information in the central database. In the latter, the updating routines are periodic, leading to unnecessary updating. Both solutions are based on general file registries and not contact registries. They are both also accommodated for predefined local networks, and not public communication networks.

Summary of the invention

It is an object of the present invention to provide an arrangement that eliminates the drawbacks described above. The features defined in the claims enclosed characterize this method.

In particular, it is an object of the present invention to provide a system always keeping the content of a user's local contact register updated and completed.

Another object of the present invention is to provide a system requiring a minimum of effort from the users.

A further object of the present invention is to provide a system keeping a number of registers belonging to one single user (on his/her cellular phone, PDA, PC. etc.) consistent.

These objects are achieved by providing the system according to the independent claims enclosed.

In particular, the system provides a solution wherein contact information, e.g. addresses and telephone numbers, automatically is distributed from one or more central registers to a network of decentralized devices containing local registries.

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The system according to the present invention comprises one or several information databases, either external or integrated in the system, and a central storage device identifying the users of the system and the contacts of the

5 users through uniquely identifiable profiles, and one or several personal storage devices (terminals) containing the contacts of the user and/or pointers to information about these contacts in one or several information databases. Further, based on predefined downloading rules given in the

10 actual users profile, a means transfers information from the above mentioned information database(s) to the actual users actual personal storage device, by rewriting parts or all of the information on the device, and/or by presenting the information for the user on the device, in order to

15 make it visual or to execute certain operations (calling up someone directly).

When a user changes his or hers list of contacts locally on one of the personal storage devices, or on an internet based storage area (also a personal storage device), the

20 system updates the pointer indications connected the users list of contacts, on the personal storage device, in other personal storage devices and on the central storage device (where the users main register at all times are stored).

According to a preferred embodiment of the present

25 invention, the way of distributing information to the terminals may be user-dependent. For example, downloading may occur when the terminal is switched on, once a day, once a week or when information about a contact is requested. If the users list of contacts on the terminal is

30 not similar to the users main register in the central storage device (the list of contacts have been changed on another terminal), the system also updates the list of contacts on the terminal when downloading.

According to another preferred embodiment of the invention,

35 the system is adjusted to update the registries of the user

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terminals immediately according to the distributed update
information as it arrives the terminals. If the
information, e.g., is distributed through short messages,
and the terminals are cellular phones, the short messages
may be adjusted to change the information concerning a
certain contact in the memory of the user's terminal
according to the corresponding changes in the central
information database.

The system is preferably administrated by an administration
means through an admin interface i.a. taking care of
registering of new users, removing or adding contacts of
the users, changes in the information database, updating
rules, the generating of pointer indications etc.

Brief description of the drawings

Fig. 1 illustrates the system architecture of a preferred
embodiment of the present invention.

Brief description of the drawings

In the following, preferred embodiments of the present
invention will be described. The examples are for
illustrative purposes only, and are not considered as
limiting. All other embodiments within the scope of the
independent claims will also be included in the invention.

One preferred embodiment of the present invention is a
system comprising an *information database* (1) stored in an
external storage device including personal data concerning
contacts (persons, companies etc.), a *central storage
device* (2), one or several local registries per user stored
on platforms in user terminals (3), *communication networks*
(4) through which information between system and user is
transferred, a *portal* (5) providing interface between the
communication networks and the system, and an
administration node (6) providing the flow of information,

user registering, removing or adding contacts to the contact lists of the users, changes in the information database(s) etc.

External storage device

5   The external storage device is divided into a number of data areas, one per potential contact, and may include information concerning all addressable persons and companies (e.g. telefonkatalogen.no). By entering a user-id, the user is at any time allowed to change the personal

10   data in his/her own data area. The personal data of a user may also be changed by the system administrator of the external storage device (e.g. operational staff at telefonkatalogen.no). This could be the case when the user, e.g., changes mobile operator and therefore receives a new

15   telephone number and the system administrator has for the external storage device an updating agreement with relevant mobile operators.

     The data area may include information such as addresses, telephone numbers, e-mail addresses, profession, work place

20   and attachments. The attachments could, e.g., be some documents. The data area may also be a part of a general database or a database by itself.

     The external storage device could also be an integrated part of the system.

25   ## The central storage device

     The central storage device includes the users profiles. The user profile includes information about who is included in the different users lists of contacts. Note that a user may have different contact lists on each of his/her terminals.

30   In addition, the profiles include further necessary information that the system requires for each user. The profile should at least include:

- The user's terminals,

- Which platforms being used by the various terminals,

- How much information should be stored per contact.
  Note that this may vary from terminal to terminal. For
  example, a cellular phone may have stored the
  telephone number of the contacts only, while a PC or
  an internet based contact register may store all
  information being available in the information
  database per contact,

Terminals

Terminals are here referred to as devices in which the
users have stored their contact registers, or in which they
have access to their contact registries from. In a
preferred embodiment, this may be cellular phones
(including WAP/3G phones) PCs, PDAs (Personal Digital
Assistants), digital PSTN phones, Pocket PCs or
SmartPhones.

Platforms

The platforms in which the local registries of the users
are stored may vary from terminal to terminal. The
registries are built up by information regarding the users
contacts and pointer indicators to information about the
same contacts in the external storage device.

Examples of such platforms are Microsoft Outlook, the
operative system in WAP/Cellular Phones or other
PDA/PC/cellular phone systems or operative systems
supporting storage of registers, i.e. supporting at least
simple databases. In an operative system of a simple
cellular telephone, these will typically operate on the
telephone memory, and in data terminals (both handheld and
stationary/portable) this will typically be the contact

register of Microsoft Outlook. In internet based registries
the register will be the users data area on a server.

Existing platforms are integrated in the system with a plug
in which communicates (through the portal) with the
5   administration node, for organisation and updating of the
users contact register with pointer indicators, and for
downloading information due to given user predefined
downloading rules. Examples on downloading rules are:

• Downloading and rewriting all or parts of the
10   register when the terminal is switched on,

• downloading and rewriting all or parts of the
register daily, weekly or monthly,

• downloading and only presenting the requested
information through the platform interface.

15 A method for downloading parts of the register will
typically be to only download information about one or
several marked contacts.

Specially adjusted platforms have this functionality in-
built.

20 The platforms have therefore an interface towards the
portal.

Administration node

The administration node has a user interface that may be a
web interface. The users may register, change personal data
25 in the external storage device, or change their profiles.

The administration node identifies which platform that is
requesting information and distributes the requested

information from the external storage device via the portal
and the communication networks to the actual platform.

The administration node also identifies contacts in the
external storage device, generates pointer indicators for
5   these contacts and distributes these indicators to the
actual registers on the actual platforms.

The administration node generates the users main register
in the user profile on the central storage device and
maintenance this when changes in the users list of contacts
10   occur in one of the local registries (on the platforms).

Consequently, the administration node has to have access
and interface to both the central and the external storage
device.

Portal

15   The portal is the interface between the system and the
communication network(s) through which the information is
to be distributed. It has to be able to both receive and
transmit data adjusted to this (these) communication
network(s), as well as being able to communicate with other
20   nodes in the system.

User registration

The user will be registered as a user of the system through
the administration node by entering required information
regarding the user profile in the user interface, and who
25   upon response of that receives a user-id. Thereafter, the
contact list of the user will be sent from the platform to
the administration node. The administration node identifies
all contacts in the contact list of the user in the
external storage device, and returns the pointer indicators
30   for storing in the central and the personal storage
devices.

If a contact is not present in the external storage device,
the user can chose to keep or remove this contact from his
or hers contact list.

Changes in the external storage device

5   According to a preferred embodiment, a user may edit the
data stored on his/her data area in the external storage
device through the administration node. In this case, the
administration node accesses the external storage device,
and implements the changes given by this user.

10   Downloading information

The platform downloads all or parts of the users contact
register, from the external storage device, via the
communication networks, the portal and the administration
node, based on the users predefined rules for downloading
15   and the users main register in stored in the user profile.
If the users main register has been changed via another
platform since previous downloading, the users list of
contacts on the actual platform will be updated in the same
operation.

20   The downloading rules are defined by the user and also
stored in the platforms. The pointer indicators to
respective contact information in the external storage
device indicate for which contacts the need for information
has occurred. Downloaded information replaces "old"
25   information in the user register or is being presented
through the platforms interface (a screen, a printer, etc)
without storing locally.

The requested information is distributed on a data carrier
adjusted for updating the local registries directly.

30   *Example: Updating register in a cellular phone:*
Information is distributed as a short message, a WAP

*message or equivalent to the cellular phone in order to
directly replace "old" information regarding the same
person.*

*Example: Updating of contact list in Microsoft Outlook on
a PC: The user has chosen updating when the terminal is
switched on and downloaded information replaces "old"
information regarding the same person, automatically and
without notice.*

Changes in the contact list of a user

When a user adds or removes a contact in his/her contact
list on one of his/her platforms, the change will
automatically be registered by the platform. The platform
communicates with the administration node and updates
accordingly pointer indicators in the local register on the
platform and in the main register in the user profile on
the central storage device.

From a user's point of view

In the following, some aspects of how a user will
experience the system are listed:

- The user is able to verify and update all his/her
  address registers on his/her PC/PDA and/or WAP phone
  only by means of a few keystrokes,

- The user can download and store or only visualize
  information from correct personal main register, or
  information regarding a specific or several specific
  contacts on all terminals at all times,

- When the user changes the information regarding him-
  /herself in a central electronic catalogue, he/she
  can be sure that all other users having him/her as
  one of their contacts at any time possess with the

right information, without making any further
efforts (like mailing an address modification card),

- The user may keep his/her existing type of personal
  address register when using the system assuming that
  the register is known and compatible to the system.

In the following, a user example will be discussed:

During the night, a user of the system makes three
potential acquaintances (A, B and C) and enters their names
and telephone numbers in the memory of his cellular phone.
The cellular phone then transmits the new extended register
(or only the change that has been introduced) as a message
to the portal. The administration node identifies the user
on basis of the users phone number and the new contacts on
basis of the entered telephone numbers and updates the
contact lists of the user. By this, the new acquaintances
A, B and C will automatically be included in all the
contact lists of the user.

Two days later, the user finds out that he would like to
mail a letter to acquaintance A, and needs his postal
address. When the user was registered to the system, he
chose updating of his registries at the time of logging on
to the communication network. He switches on his PC and
starts Microsoft Outlook. The acquaintances A, B and C are
already stored in the folder of new acquaintances as
completely filled address cards. He arranges them in proper
folders, A in the "private" folder and B in the folder of
business connections, while he deletes C even if he knows
that this implies removal of C also in the contact list of
his cellular phone. He pastes the postal address of
acquaintance A in a document and posts it.

For some reason, the same user has to change his telephone
number, and registers the change in his data area in the
information database through the administration node. A few

hours later, acquaintance B calls him on the new telephone number.

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Patent claims

1.   A system with a number of users each having one or more personal storage device(s) associated with one or more communication networks, said personal storage device(s)
5   include(s) contact registers including information specifying the respective contacts of the user and/or pointer indicators to information about the same respective contacts in one or more general information database(s), said information database(s) either integrated or
10   externally connected to the system, c h a r a c t e r i z e d   i n

a first means adjusted to identify a need, for distribution of information about a users contact(s), on the basis of said pointer indicators in the users
15   said personal storage device and a unique identifiable profile belonging to the user,

a second means, adjusted to distribute information about a contact from said information database(s), through said communication network(s), to the personal
20   storage device where the need for information has occurred.

2.   System according to claim 1, c h a r a c t e r i z e d   i n with a central storage device containing the unique identifiable profile for every
25   said user, and indications of every users said contacts.

3.   System according to one of the preceding claims, c h a r a c t e r i z e d   i n that the said personal storage device(s) are localized on user terminals and/or in a user data area on a server, and the said personal storage
30   device is administrated by a contact register platform.

4.   System according to one of the preceding claims, c h a r a c t e r i z e d   i n that the first means is

able to communicate with the said personal storage device, the said information database(s) and the said second means.

5.   System according to one of the preceding claims, c h a r a c t e r i z e d   i n   that the second means is able to communicate with the said personal storage device, the said information database(s), the said first means and the said central storage device.

6.   System according to one of the preceding claims, c h a r a c t e r i z e d   i n   an administration device providing registering of users, registering of user profile, and changes of information about a user in the said information database(s), through a user interface.

7.   System according to one of the preceding claims, c h a r a c t e r i z e d   i n   that the said profile of the user in addition to necessary user information at least includes information about the users personal storage device(s), respective terminal type(s) and pointer indications for the users main register.

8.   System according to one of the preceding claims, c h a r a c t e r i z e d   i n   that said contact register platform(s) performs registration of the users downloading rules.

9.   System according to one of the preceding claims, c h a r a c t e r i z e d   i n   a third means for identifying a contact in the said information database(s) and for generating a pointer indication to information about the said contact in the said information database(s).

10.   System according to one of the preceding claims, c h a r a c t e r i z e d   i n   a forth means for updating said pointer indications of a users contacts in said personal storage device and in the users said main

register, when the user adds or removes one or more contact(s) in one of his/hers personal storage device(s).

11. System according to one of the preceding claims, c h a r a c t e r i z e d   i n   that said administration device is able to communicate with said first, second, third and forth means, said personal storage device, said information database(s) and said central storage device.

12. System according to one of the preceding claims, c h a r a c t e r i z e d   i n   that said personal storage device is integrated in the said information database(s).

13. System according to one of the preceding claims, c h a r a c t e r i z e d   i n   that one or more of said communication network(s) is a mobile telephone network and/or internet.

14. System according to one of the preceding claims, c h a r a c t e r i z e d   i n   that at least some of the said user terminals are cellular phones.

15. System according to one of the preceding claims, c h a r a c t e r i z e d   i n   that at least some of the said user terminals are PDAs (Personal Digital Assistent).

16. System according to one of the preceding claims, c h a r a c t e r i z e d   i n   that at least some of said terminals are PCs.

17. System according to one of the preceding claims, c h a r a c t e r i z e d   i n   that said contact register platform is Microsoft Outlook, Lotus Notes or another terminal specific menu system.

18. System according to one of the preceding claims, c h a r a c t e r i z e d   i n   that said contact register platform is supporting a web based contact register.

19. System according to one of the claims 5-18, c h a r a c t e r i z e d   i n   that said administration device is accessible through Internet, and that the said interface is a web based interface.

5 20. System according to one of the claims 5 - 18, c h a r a c t e r i z e d   i n   that said administration device is accessible through a wap portal or a portal for 3G cellular phones, and that said interface is a wap based interface or an interface for 3G cellular phones.

10 21. System according to one of the claims 5 - 18, c h a r a c t e r i z e d   i n   that said administration device is accessible through a user interface installed locally on the said terminals of the user.

22. A method where a number of users each having one or
15 more personal storage device(s) are associated with one or more communication networks, said personal storage device(s) include(s) contact registries including information specifying the respective contacts of the users and/or pointer indicators to information about the same
20 contacts in one or more information database(s), c h a r a c t e r i z e d   i n

identifying a need of information from one or more information database(s) concerning one or more specified contact(s) of a certain user,

25 distributing information about the said contact(s) through said one or more communication networks to the personal storage device(s) of said one or more of the users.

23. Method according to claim 22,
30 c h a r a c t e r i z e d   i n

updating the contact register(s) of said one or more
of the users based on said distributed information,

presenting the said distributed information through
the said interface for the said actual contact
register platform.

24. Method according to claim 22 or 23,
c h a r a c t e r i z e d   i n   that said specification
of the respective contacts of the users is stored both
centrally and in the respective personal storage device(s)
of the users.

25. Method according to claim 22, 23 or 24,
c h a r a c t e r i z e d   i n   that said specification
of the respective contacts of the users is stored only in
one or more of the said information database(s).

26. Method according to claim 22, 23, 24 or 25,
c h a r a c t e r i z e d   i n

updating said pointer indicators of the contacts of a
user in said personal storage device(s) of that user
when the user adds and/or removes one or more contacts
in a contact register in one or more of the personal
storage devices of the user.
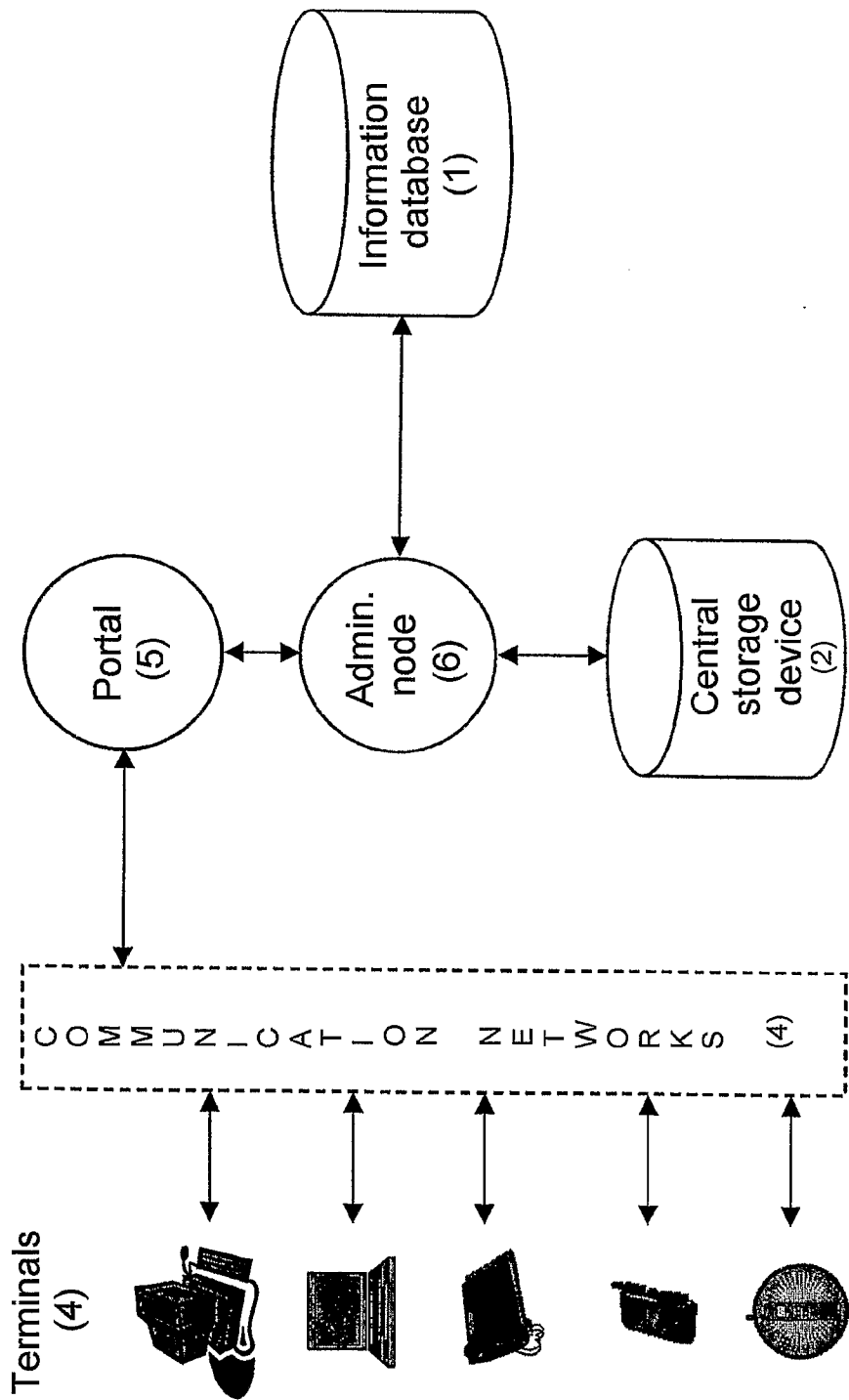
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G06F 17/30, G06F 17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9923591 A1 (SAGE ENTERPRISES INC), 14 May 1999 (14.05.99), page 4, line 1 - page 5, line 11; page 7, line 16 - line 30; page 11, line 8 - line 20, page 13, line 9 - line 17; page 19, line 19 - line 26; figure 5, abstract	1-26
	--	
X	US 6073141 A (SALAZAR, F.), 6 June 2000 (06.06.00), column 1, line 44 - column 2, line 53, abstract	1-26
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☐ Further documents are listed in the continuation of Box C.   ☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

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"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
30 January 2003	3 1 -01- 2003

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Patent document cited in search report			Publication date	Patent family member(s)			Publication date
WO	9923591	A1	14/05/99	AU	1367999	A	24/05/99
				US	6269369	B	31/07/01
US	6073141	A	06/06/00	NONE			